



UNITED STATES PATENT AND TRADEMARK OFFICE

H.A

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,300	09/08/2003	Eric Stephen Mattis	030296	2134

23696 7590 08/07/2006
QUALCOMM INCORPORATED
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER

PRESTON, ERIK D

ART UNIT	PAPER NUMBER
----------	--------------

2834

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/658,300	Applicant(s) MATTIS ET AL.	
	Examiner Erik D. Preston	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/12/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rainwater (US 4345256) in view of Belyanskii et al. (RU 2165582 C2 previously cited).

With respect to claim 1, Rainwater teaches an apparatus for providing electrical coupling, comprising: A motive device (Fig. 2, #40) being capable of rotation (Col. 2, Lines 66 & 67), said motive device being further capable of allowing electrical signals to pass there through and an antenna horn (Fig. 2, #16) rotatable about said motive device, said motive device being disposed coaxially with said antenna horn on an axis of said antenna horn which extends through a plane in which said antenna horn is rotatable, but it does not explicitly teach that said motive device is a motor having a hollow shaft extending there through. However, Belyanskii teaches a motor (Fig. 2, #25 & 26) used for actuating an antenna having a hollow shaft (Fig. 2, #31) extending there through. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the motive device of Rainwater in view of the motor and hollow shaft as taught by Belyanskii because it provides an equivalent and equally well known means for communicating signals from an antenna to a guidance and control system (Belyanskii, Abstract).

With respect to claim 2, Rainwater in view of Belyanskii teaches the apparatus of claim 1, and Rainwater teaches that the shaft comprises a conductor (Fig. 2, #70) for conducting electrical signals through said motor.

With respect to claim 3, Rainwater in view of Belyanskii teaches the apparatus of claim 1, and Rainwater teaches an electrical conductor (Fig. 2, #70) located within said shaft for providing electrical signals through said motor.

With respect to claim 4, Rainwater in view of Belyanskii teaches the apparatus of claim 3, and Rainwater teaches that the electrical conductor comprises a coaxial cable (Col. 3, Lines 32-44, the terms "cable" and "feed line" are considered by the examiner to be equivalents).

With respect to claim 5, Rainwater in view of Belyanskii teaches the apparatus of claim 3, and Rainwater teaches that the conductor comprises a rotational conductor (Fig. 1, #80 & 50).

With respect to claim 6, Rainwater in view of Belyanskii teaches the apparatus of claim 3, and Rainwater teaches that the electrical conductor comprises a wire (Col. 3, Lines 32-44, the terms "wire" and "feed line" are considered by the examiner to be equivalents).

With respect to claim 7, Rainwater in view of Belyanskii teaches the apparatus of claim 1, and Rainwater teaches that the shaft comprises a waveguide (as seen in Figs. 1 & 2).

With respect to claim 8, Rainwater in view of Belyanskii teaches the apparatus of claim 7, and Rainwater teaches that the shaft additionally comprises a waveguide coupler (Fig. 1, #80 & 50).

With respect to claim 9, Rainwater in view of Belyanskii teaches the apparatus of claim 3, and Rainwater teaches a rotational coupler (Fig. 1, #80) for coupling said electrical signals between a second conductor (Fig. 1, 50) and the conductor (Fig. 1, #78).

With respect to claim 10, Rainwater in view of Belyanskii teaches the apparatus of claim 3, and Belyanskii teaches a platform (Fig. 2, #24) connected to the shaft wherein the conductor is fixed with respect to the shaft.

Claim 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rainwater (US 4345256) in view of Belyanskii et al. (RU 2165582 C2 previously cited) further in view of Studer et al. (US 4321572 previously cited).

With respect to claims 11 & 12, Rainwater in view of Belyanskii teaches the apparatus of claim 3, Belyanskii teaches a platform connected to the shaft, and Rainwater teaches that the electrical conductor comprises an outer conductor (Fig. 2, #76), a dielectric (which inherently exists in a coaxial feed line), and a center conductor (Fig. 2, #78), wherein the dielectric and the center conductor are fixed, but it does not teach that the outer conductor is fixed to the shaft. However, Studer teaches a shaft that functions (Fig. 6, #110) as a second conductor. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coaxial conductors of Rainwater in view of the coaxial conductors as taught by Studer as merely a substitution

of equally well known and equivalent means for transmitting signals through a rotor shaft. It also would have been obvious to one of ordinary skill in the art at the time of the invention to fix the outer conductor to the shaft since it has been held that “the use of a one piece construction...would be merely a matter of obvious engineering choice.” (In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

With respect to claim 13, Rainwater in view of Belyanskii teaches the apparatus of claim 1, and Rainwater teaches that the shaft comprises a dielectric material within the center shaft, and a center conductor within the shaft, but it does not teach that the dielectric material is affixed to the shaft. However, Studer teaches a shaft (Fig. 6, #110) with a dielectric material (Fig. 6, #106) affixed thereto. It also would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coaxial conductors of Rainwater in view of the coaxial conductors as taught by Studer as merely a substitution of equally well known and equivalent means for transmitting signals through a rotor shaft. It would have been obvious to one of ordinary skill in the art at the time of the invention to fix the outer conductor to the shaft since it has been held that “the use of a one piece construction...would be merely a matter of obvious engineering choice.” (In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

Response to Arguments

Applicant's arguments, see page 4 of the remarks, filed 5/12/2006, with respect to the antenna of Studer being parabolic and therefore not a horn antenna have been fully considered and are persuasive. The previous rejections involving the Studer

Art Unit: 2834

reference have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rainwater (as stated above).

In response to the applicant's argument that the shaft of Studer is not hollow, it is noted by the examiner that in Fig. 6 of the Studer reference the shaft (#110) is clearly shown to be hollow.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2649539, US 3324472, US 3896446, US 3949404 & JP 63-067902

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



07/11/2006



DARREN SCHUBERG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800